



SEQUENCE LISTING

<110> Yan, Riqiang
Tomasselli, Alfredo G.
Gurney, Mark E.
Emmons, Thomas L.
Bienkowski, Mike J.
Heinrikson, Robert L.

<120> SUBSTRATES AND ASSAYS FOR BETA-SECRETASE ACTIVITY

<130> 29915/00281EUS

<140> 10/801,493
<141> 2004-03-16

<150> 09/908,943
<151> 2001-07-19

<150> 60/219,795
<151> 2000-07-19

<160> 199

<170> PatentIn Ver. 2.0

<210> 1
<211> 2070
<212> DNA
<213> Homo sapiens

<400> 1
atggcccaag ccctgccctg gtcctgtctg tggatggcg cgggagtgc gcctgcccac 60
ggcacccagc acggcatccg gctgccctg cgacggcc tcggggcgcc cccccctgggg 120
ctggcgctgc cccggagac cgacgaagag cccgaggagc cggccggag gggcagctt 180
gtggagatgg tggacaacct gaggggcaag tcggggcagg gctactacgt ggagatgacc 240
gtggcagcc ccccgagac gctcaacatc ctggtgata caggcagcag taactttgca 300
gtgggtctg ccccccaccc ttccctgcat cgctactacc agaggcagct gtccagcaca 360
taccgggacc tccggaaggg tgtgtatgtg ccctacaccc agggcaagtg ggaaggggag 420
ctggcaccg acctgtaag catccccat ggccccaacg tcactgtcg tgccaacatt 480
gctgccatca ctgaatcaga caagttcttc atcaacggct ccaactggga aggcatcctg 540
gggctggcct atgctgagat tgccaggcct gacgactccc tggagcctt ctttgactct 600
ctgttaaagc agaccacgt tcccaaccc ttctccctgc acctttgtgg tgctggcttc 660
ccctcaacc agtctaagg gctggcctt gtggagggaa gcatgatcat tgaggtatc 720
gaccactcgc tgcacacagg cagtctctgg tatacaccctt ccggggggaa gtggatttat 780
gaggtcatca ttgtcggtt ggagatcaat ggacaggatc tgaaaatggaa ctgcaaggag 840
tacaactatg acaagagcat tgcggacatg ggcaccacca accttcgtt gcccaagaaaa 900
gtgttgaag ctgcagtcaa atccatcaag gcggccctt ccacggagaa gtccctgtat 960
ggtttctggc taggagagca gctggtgtgc tggcaagcag gcaccacccc ttggAACATT 1020
ttcccagtca tctcactcta cctaattgggt gaggttacca accagtctt ccgcacatcacc 1080
atccctccgc agcaataacct gcggccagtg gaagatgtgg ccacgtccca agacgactgt 1140
tacaagtttgc ccatctcaca gtcattccacg ggcactgtt tggagctgt tatcatggag 1200
ggcttctacg ttgtcttgc tcggggccga aaacgaattt gctttgtgt cagcgcttgc 1260
catgtgcacg atgagttcag gacggcagcg gtggaaaggcc cttttgtcac cttggacatg 1320
gaagactgtg gctacaacat tccacagaca gatgagtcac ccctcatgac catagcctat 1380
gtcatggctg ccatctgcgc cctcttcatg ctggcaactt gcctcatggt gtgtcagtgg 1440
cgctgcctcc gctgcctgcg ccaggcagcat gatgactttt ctgatgacat ctccctgt 1500
aagtgaggag gcccattgggc agaagataga gatccccctg gaccacaccc cctgggttca 1560
cttggtcac aagttaggaga cacatggc acctgtggcc agagcacctc agagaccctcc 1620
ccaccacca aatgcctctg ccttgcgtt gaaaggaaaag gctggcaagg tgggttccag 1680
ggactgtacc tggaaac agaaaagaga agaaagaagc actctgtgg cggaaatact 1740
cttggtcacc tcaaatttaa gtcggaaat tctgctgtt gaaacttcag ccctgaaccc 1800

ttgtccacca ttccttaaa ttctccaacc caaagtattc ttctttctt agtttcagaa 1860
gtactggcat cacacgcagg ttaccttggc gtgtgtccct gtggtaaccct ggcagagaag 1920
agaccaagct tgccccctg ctggccaaag tcagtaggag agatgcaca gtttgctatt 1980
tgcttagag acaggactg tataaacaag cctaacattg gtgcaaagat tgcccttga 2040
ataaaaaaaaaaaaaaa 2070

<210> 2
<211> 501
<212> PRT
<213> Homo sapiens

<400> 2
Met Ala Gln Ala Leu Pro Trp Leu Leu Leu Trp Met Gly Ala Gly Val
1 5 10 15

Leu Pro Ala His Gly Thr Gln His Gly Ile Arg Leu Pro Leu Arg Ser
20 25 30

Gly Leu Gly Gly Ala Pro Leu Gly Leu Arg Leu Pro Arg Glu Thr Asp
35 40 45

Glu Glu Pro Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val
50 55 60

Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr
65 70 75 80

Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser
85 90 95

Ser Asn Phe Ala Val Gly Ala Ala Pro His Pro Phe Leu His Arg Tyr
100 105 110

Tyr Gln Arg Gln Leu Ser Ser Thr Tyr Arg Asp Leu Arg Lys Gly Val
115 120 125

Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp
130 135 140

Leu Val Ser Ile Pro His Gly Pro Asn Val Thr Val Arg Ala Asn Ile
145 150 155 160

Ala Ala Ile Thr Glu Ser Asp Lys Phe Phe Ile Asn Gly Ser Asn Trp
165 170 175

Glu Gly Ile Leu Gly Leu Ala Tyr Ala Glu Ile Ala Arg Pro Asp Asp
180 185 190

Ser Leu Glu Pro Phe Phe Asp Ser Leu Val Lys Gln Thr His Val Pro
195 200 205

Asn Leu Phe Ser Leu His Leu Cys Gly Ala Gly Phe Pro Leu Asn Gln
210 215 220

Ser Glu Val Leu Ala Ser Val Gly Gly Ser Met Ile Ile Gly Gly Ile
225 230 235 240

Asp His Ser Leu Tyr Thr Gly Ser Leu Trp Tyr Thr Pro Ile Arg Arg
245 250 255

Glu Trp Tyr Tyr Glu Val Ile Ile Val Arg Val Glu Ile Asn Gly Gln
260 265 270

Asp Leu Lys Met Asp Cys Lys Glu Tyr Asn Tyr Asp Lys Ser Ile Val
 275 280 285
 Asp Ser Gly Thr Thr Asn Leu Arg Leu Pro Lys Lys Val Phe Glu Ala
 290 295 300
 Ala Val Lys Ser Ile Lys Ala Ala Ser Ser Thr Glu Lys Phe Pro Asp
 305 310 315 320
 Gly Phe Trp Leu Gly Glu Gln Leu Val Cys Trp Gln Ala Gly Thr Thr
 325 330 335
 Pro Trp Asn Ile Phe Pro Val Ile Ser Leu Tyr Leu Met Gly Glu Val
 340 345 350
 Thr Asn Gln Ser Phe Arg Ile Thr Ile Leu Pro Gln Gln Tyr Leu Arg
 355 360 365
 Pro Val Glu Asp Val Ala Thr Ser Gln Asp Asp Cys Tyr Lys Phe Ala
 370 375 380
 Ile Ser Gln Ser Ser Thr Gly Thr Val Met Gly Ala Val Ile Met Glu
 385 390 395 400
 Gly Phe Tyr Val Val Phe Asp Arg Ala Arg Lys Arg Ile Gly Phe Ala
 405 410 415
 Val Ser Ala Cys His Val His Asp Glu Phe Arg Thr Ala Ala Val Glu
 420 425 430
 Gly Pro Phe Val Thr Leu Asp Met Glu Asp Cys Gly Tyr Asn Ile Pro
 435 440 445
 Gln Thr Asp Glu Ser Thr Leu Met Thr Ile Ala Tyr Val Met Ala Ala
 450 455 460
 Ile Cys Ala Leu Phe Met Leu Pro Leu Cys Leu Met Val Cys Gln Trp
 465 470 475 480
 Arg Cys Leu Arg Cys Leu Arg Gln Gln His Asp Asp Phe Ala Asp Asp
 485 490 495
 Ile Ser Leu Leu Lys
 500

<210> 3
 <211> 1977
 <212> DNA
 <213> Homo sapiens

<400> 3
 atggcccaag ccctgccctg gtcctgtcg tggatggcgc cgggagtgc gcctgcccac 60
 ggcacccagc acggcatccg gctgccctg cgacggcc tcggggcgc cccccctgggg 120
 ctgcggctgc cccgggagac cgacgaagag cccgaggagc cccggccggag gggcagctt 180
 gtggagatgg tggacaacct gaggggcaag tcggggcagg gctactacgt ggagatgacc 240
 gtgggcagcc cccccgcagac gctcaacatc ctggtgata caggcagcag taactttgca 300
 gtgggtgtcg ccccccaccc cttccctgcat cgctactacc agaggcagct gtccagcaca 360
 taccgggacc tccggaaggg tggatgtcg ccctacaccc agggcaagtg ggaaggggag 420
 ctgggcaccc acctgttaag catccccat ggccccaacg tcactgtgcg tgccaaacatt 480
 gctgccatca ctgaatcaga caagttcttc atcaacggct ccaactggga aggcacccctg 540
 ggctggccct atgctgagat tgccaggctt tggatgtcg gcttcccccct caaccagtt 600
 gaagtgtcg cctctgtcg aggagcatg atcattggag gtatcgacca ctcgtgtac 660

acaggcagtc tctggtatac acccatccgg cgggagtggt attatgaggt gatcattgtg 720
 cgggtggaga tcaatggaca ghatctgaaa atggactgca aggagtacaa ctatgacaag 780
 agcattgtgg acagttgcac caccacccctt cggttgcacca agaaagtgtt tgaagctgca 840
 gtcaaatcca tcaaggcage ctccctccacg gagaagttcc ctgatggttt ctggcttagga 900
 gagcagctgg tggctggca agcaggcacc accccttggaa acatttccc agtcatctca 960
 ctctacctaa tgggtgaggt taccaaccag tccttccgca tcaccatcct tccgcagcaa 1020
 tacctgcggc cagtgaaaga tggccacg tcccaagacg actgttacaa gtttgcac 1080
 tcacagtcat ccacgggcac tggatggaa gctgttatca tggagggctt ctacgttgc 1140
 tttgatcgaa cccgaaaacg aattggctt gctgtcagcg cttgccatgt gcacgatgag 1200
 ttcaggacgg cagcgttggaa aggccctttt gtcaccccttgg acatggaaaga ctgtggctac 1260
 aacattccac agacagatga gtcacccctc atgaccatag cctatgtcat gggtgcac 1320
 tgcgcctct tcacgttgc acctctgcctc atgggtgtc agtggcgctg cctccgctgc 1380
 ctgcgcacg agcatgatga ctttgcgtat gacatctccc tgctgaagtg aggaggccca 1440
 tggcagaaatg atagagatcc ccttggacca cacccctgtg gttcacccctt gtcacaagta 1500
 ggagacacacg atggcacttggccagagc acctcaggac cctcccccacc caccaaatgc 1560
 ctctgcctt atggagaagg aaaaggctgg caaggtgggt tccaggact gtacctgtag 1620
 gaaacagaaa agagaagaaa gaagcactt gctggcgaaa atactttgg tcacctcaaa 1680
 ttaagtcgg gaaattctgc tgcttgcac ttccagccctg aaccccttgc caccattcct 1740
 ttaaattctc caacccaaag tatttttctt ttcttagttt cagaagtaact ggcatcacac 1800
 gcaggttacc ttggcggtgt tccctgtgtt accctggcag agaagagacc aagttgttt 1860
 ccctgcgtggc caaagtcaatggaggat gcacagtttgc ctatttgcct tagagacagg 1920
 gactgtataa acaaggctaa cattggtgca aagattgcctt cttgaaaaaaa aaaaaaaaaa 1977

<210> 4
 <211> 476
 <212> PRT
 <213> Homo sapiens

<400> 4
 Met Ala Gln Ala Leu Pro Trp Leu Leu Leu Trp Met Gly Ala Gly Val
 1 5 10 15

Leu Pro Ala His Gly Thr Gln His Gly Ile Arg Leu Pro Leu Arg Ser
 20 25 30

Gly Leu Gly Gly Ala Pro Leu Gly Leu Arg Leu Pro Arg Glu Thr Asp
 35 40 45

Glu Glu Pro Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val
 50 55 60

Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr
 65 70 75 80

Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser
 85 90 95

Ser Asn Phe Ala Val Gly Ala Ala Pro His Pro Phe Leu His Arg Tyr
 100 105 110

Tyr Gln Arg Gln Leu Ser Ser Thr Tyr Arg Asp Leu Arg Lys Gly Val
 115 120 125

Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp
 130 135 140

Leu Val Ser Ile Pro His Gly Pro Asn Val Thr Val Arg Ala Asn Ile
 145 150 155 160

Ala Ala Ile Thr Glu Ser Asp Lys Phe Phe Ile Asn Gly Ser Asn Trp
 165 170 175

Glu Gly Ile Leu Gly Leu Ala Tyr Ala Glu Ile Ala Arg Leu Cys Gly

180	185	190	
Ala Gly Phe Pro Leu Asn Gln Ser	Glu Val Leu Ala Ser	Val Gly Gly	
195	200	205	
Ser Met Ile Ile Gly Gly Ile Asp His Ser	Leu Tyr Thr Gly Ser	Leu	
210	215	220	
Trp Tyr Thr Pro Ile Arg Arg Glu Trp Tyr	Tyr Glu Val Ile Ile Val		
225	230	235	240
Arg Val Glu Ile Asn Gly Gln Asp Leu Lys	Met Asp Cys Lys Glu Tyr		
245	250	255	
Asn Tyr Asp Lys Ser Ile Val Asp Ser	Gly Thr Thr Asn	Leu Arg Leu	
260	265	270	
Pro Lys Lys Val Phe Glu Ala Ala Val Lys	Ser Ile Lys Ala Ala Ser		
275	280	285	
Ser Thr Glu Lys Phe Pro Asp Gly Phe Trp	Leu Gly Glu Gln Leu Val		
290	295	300	
Cys Trp Gln Ala Gly Thr Thr Pro Trp Asn	Ile Phe Pro Val Ile Ser		
305	310	315	320
Leu Tyr Leu Met Gly Glu Val Thr Asn Gln	Ser Phe Arg Ile Thr	Ile	
325	330	335	
Leu Pro Gln Gln Tyr Leu Arg Pro Val Glu Asp	Val Ala Thr Ser Gln		
340	345	350	
Asp Asp Cys Tyr Lys Phe Ala Ile Ser Gln	Ser Ser Thr Gly Thr Val		
355	360	365	
Met Gly Ala Val Ile Met Glu Gly Phe Tyr	Val Val Phe Asp Arg Ala		
370	375	380	
Arg Lys Arg Ile Gly Phe Ala Val Ser Ala	Cys His Val His Asp Glu		
385	390	395	400
Phe Arg Thr Ala Ala Val Glu Gly Pro Phe	Val Thr Leu Asp Met Glu		
405	410	415	
Asp Cys Gly Tyr Asn Ile Pro Gln Thr Asp	Glu Ser Thr Leu Met Thr		
420	425	430	
Ile Ala Tyr Val Met Ala Ala Ile Cys Ala	Leu Phe Met Leu Pro Leu		
435	440	445	
Cys Leu Met Val Cys Gln Trp Arg Cys	Leu Arg Cys Leu Arg Gln Gln		
450	455	460	
His Asp Asp Phe Ala Asp Asp Ile Ser	Leu Leu Lys		
465	470	475	

<210> 5
 <211> 14
 <212> PRT
 <213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 5
Lys Val Glu Ala Asn Tyr Glu Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 6
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 6
Lys Val Glu Ala Asn Tyr Glu Val Glu Gly Glu Arg Cys Lys Lys
1 5 10 15

<210> 7
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 7
Lys Val Glu Ala Asn Tyr Ala Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 8
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 8
Lys Val Glu Ala Asn Tyr Ala Val Glu Gly Glu Arg Cys Lys Lys
1 5 10 15

<210> 9
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 9
Glu Ala Asn Tyr Glu Val Glu Phe
1 5

<210> 10
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 10
Gly Val Leu Leu Ala Ala Gly Trp
1 5

<210> 11
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 11
Ile Ile Lys Met Asp Asn Phe Gly
1 5

<210> 12
<211> 10.
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 12
Asp Ser Ser Asn Leu Glu Met Thr His Ala
1 5 10

<210> 13
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (7)
<223> Xaa=cysteic acid

<400> 13
Thr His Gly Phe Gln Leu Xaa His
1 5

<210> 14

<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 14
Cys Tyr Thr His Ser Phe Ser Pro
1 5

<210> 15
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (4)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<400> 15
Ser Thr Phe Xaa Gly Ser Xaa Gly
1 5

<210> 16
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<400> 16
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 17
<211> 8

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)..(2)
<223> Xaa=any amino acid

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<400> 17
Xaa Xaa Gln Xaa Xaa Xaa Xaa Ser
1 5

<210> 18
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)..(2)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<400> 18
Xaa Xaa Glu Xaa Xaa Xaa Xaa Glu
1 5

<210> 19
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 19
Ser Glu Val Asn Leu Asp Ala Glu Phe Arg
1 5 10

<210> 20
<211> 10
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 20
Ser Glu Val Lys Met Asp Ala Glu Phe Arg
1 5 10

<210> 21
<211> 10
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> MOD_RES
<222> (5)
<223> Nle

<400> 21
Ser Glu Val Asn Xaa Asp Ala Glu Phe Arg
1 5 10

<210> 22
<211> 15
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 22
Gly Ser Glu Ser Met Asp Ser Gly Ile Ser Leu Asp Asn Lys Trp
1 5 10 15

<210> 23
<211> 17
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 23
Trp Lys Lys Gly Ala Ile Ile Gly Leu Met Val Gly Gly Val Val Lys
1 5 10 15

Lys

<210> 24
<211> 11

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 24
Ala Asn Leu Ser Thr Phe Ala Gln Pro Arg Arg
1 5 10

<210> 25
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 25
Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu Val
1 5 10 15

Phe Phe Ala Glu
20

<210> 26
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 26
Leu Thr Gly Lys Thr Ile Thr Leu Glu Val Glu Pro Ser Asp Thr Ile
1 5 10 15

<210> 27
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (7)
<223> Xaa= cysteic acid

<220>
<221> SITE
<222> (19)
<223> Xaa = cysteic acid

<400> 27

Phe Val Asn Gln His Leu Xaa Gly Ser His Leu Val Glu Ala Leu Tyr
1 . 5 10 15

Leu Val Xaa Gly Glu Arg Gly Phe Phe Tyr Thr Pro Lys Ala
20 25 30

<210> 28
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

<220>
<221> SITE
<222> (6)
<223> Xaa=cysteic acid

<220>
<221> SITE
<222> (7)
<223> Xaa=cysteic acid

<220>
<221> SITE
<222> (11)
<223> Xaa=cysteic acid

<220>
<221> SITE
<222> (20)
<223> Xaa=cysteic acid

<400> 28
Gly Ile Val Glu Gln Xaa Xaa Ala Ser Val Xaa Ser Leu Tyr Gln Leu
1 5 10 15

Glu Asn Tyr Xaa Asn
20

<210> 29
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 29
Tyr Arg Tyr Gln Ser His Asp Tyr Ala Phe Ser Ser Val Glu Lys Leu
1 5 10 15

Leu His Ala Leu Gly Gly Cys
20

<210> 30
<211> 23

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 30
Tyr Arg Tyr Gln Ser His Asp Tyr Ala Phe Ser Ser Val Glu Lys Leu
1 5 10 15

Leu His Ala Leu Gly Gly Cys
20

<210> 31
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 31
Leu Val Asn Met Ala Glu Gly Asp
1 5

<210> 32
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 32
Arg Gly Ser Met Ala Gly Val Leu
1 5

<210> 33
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 33
Gly Thr Gln His Gly Ile Arg Leu
1 5

<210> 34
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 34
Ser Ser Asn Phe Ala Val Gly Ala
1 5

<210> 35
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 35
Gly Leu Ala Tyr Ala Glu Ile Ala
1 5

<210> 36
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 36
His Leu Cys Gly Ser His Leu Val
1 5

<210> 37
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 37
Cys Gly Glu Arg Gly Phe Phe Tyr
1 5

<210> 38
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 38
Gly Val Leu Leu Ser Arg Lys
1 5

<210> 39
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 39
Val Gly Ser Gly Val Leu Leu
1 5

<210> 40
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 40
Val Gly Ser Gly Val
1 5

<210> 41
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (9)
<223> Xaa= cysteic acid

<400> 41
Lys Val Glu Ala Leu Tyr Leu Val Xaa Gly Glu Arg
1 5 10

<210> 42
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 42
Trp Arg Arg Val Glu Ala Leu Tyr Leu Val Glu Gly Glu Arg Lys
1 5 10 15

<210> 43
<211> 14

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 43
Lys Val Glu Ala Asn Tyr Leu Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 44
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 44
Met Leu Leu Leu
1

<210> 45
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 45
Asp Ala Ala His Pro Gly
1 5

<210> 46
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 46
Lys Val Glu Ala Asn Tyr Asp Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 47
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 47
Lys Val Glu Ala Asn Leu Ala Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 48
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 48
Lys Val Glu Ala Leu Tyr Ala Val Glu Gly Glu Arg Lys Lys
1 5 10

<210> 49
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa = E, G, I, D, T, cysteic acid or S

<400> 49
Xaa Ala Asn Tyr Glu Val Glu Phe
1 5

<210> 50
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (2)
<223> Xaa= A, V, I, S, H, Y, T or F

<400> 50
Glu Xaa Asn Tyr Glu Val Glu Phe
1 5

<210> 51
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (3)

<223> Xaa= N, L, K, S, G, T, D, A, Q, or E

<400> 51

Glu Ala Xaa Tyr Glu Val Glu Phe

1 5

...

<210> 52

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (4)

<223> Xaa= Y, L, M, Nle, F or H

<400> 52

Glu Ala Asn Xaa Glu Val Glu Phe

1 5

<210> 53

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (5)

<223> Xaa= E, A, D, M, Q, S or G

<400> 53

Glu Ala Asn Tyr Xaa Val Glu Phe

1 5

<210> 54

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (6)

<223> Xaa= V, A, N, T, L, F or S

<400> 54
Glu Ala Asn Tyr Glu Xaa Glu Phe
1 5

<210> 55
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (7)
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 55
Glu Ala Asn Tyr Glu Val Xaa Phe
1 5

<210> 56
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (8)
<223> Xaa= F, W, G, A, H, P, G, N, S or E

<400> 56
Glu Ala Asn Tyr Glu Val Glu Xaa
1 5

<210> 57
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= E, G, I, D, T, cyeteic acid or S

<400> 57
Xaa Val Leu Leu Ala Ala Gly Trp
1 5

<210> 58
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (2)
<223> Xaa= A, V, I, S, H, Y, T or F

<400> 58
Gly Xaa Leu Leu Ala Ala Gly Trp
1 5

<210> 59
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (3)
<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<400> 59
Gly Val Xaa Leu Ala Ala Gly Trp
1 5

<210> 60
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (4)
<223> Xaa= Y, L, M, Nle, F or H

<400> 60
Gly Val Leu Xaa Ala Ala Gly Trp
1 5

<210> 61
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (5)

<223> Xaa= E, A, D, M, Q, S or G

<400> 61

Gly Val Leu Leu Xaa Ala Gly Trp
1 5

<210> 62

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (6)

<223> Xaa= V, A, N, T, L, F or S

<400> 62

Gly Val Leu Leu Ala Xaa Gly Trp
1 5

<210> 63

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (7)

<223> Xaa= E, G, F, H, cysteic acid or S

<400> 63

Gly Val Leu Leu Ala Ala Xaa Trp
1 5

<210> 64

<211> 8

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (8)

<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 64
Gly Val Leu Leu Ala Ala Gly Xaa
1 5

<210> 65
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= E, G, I, D, T, cysteic acid or S

<400> 65
Xaa Ile Lys Met Asp Asn Phe Gly
1 5

<210> 66
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (2)
<223> Xaa= A, V, I, S, H, Y, T or F

<400> 66
Ile Xaa Lys Met Asp Asn Phe Gly
1 5

<210> 67
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (3)
<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<400> 67
Ile Ile Xaa Met Asp Asn Phe Gly
1 5

<210> 68
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (4)
<223> Xaa= Y, L, M, Nle, F or H

<400> 68
Ile Ile Lys Xaa Asp Asn Phe Gly
1 5

<210> 69
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (5)
<223> Xaa= E, A, D, M, Q, S or G

<400> 69
Ile Ile Lys Met Xaa Asn Phe Gly
1 5

<210> 70
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (6)
<223> Xaa= V, A, N,T, L, F or S

<400> 70
Ile Ile Lys Met Asp Xaa Phe Gly
1 5

<210> 71
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (7)
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 71
Ile Ile Lys Met Asp Asn Xaa Gly
1 5

<210> 72
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (8)
<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 72
Ile Ile Lys Met Asp Asn Phe Xaa
1 5

<210> 73
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= E, G, I, D, T, cysteic acid or S

<400> 73
Xaa Ser Ser Asn Leu Glu Met Thr His Ala
1 5 10

<210> 74
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE

<222> (2)
<223> Xaa= A, V, I, S, H, Y, T or F

<400> 74
Asp Xaa Ser Asn Leu Glu Met Thr His Ala
1 5 10

<210> 75
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (3)
<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<400> 75
Asp Ser Xaa Asn Leu Glu Met Thr His Ala
1 5 10

<210> 76
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (4)
<223> Xaa= Y, L, M, Nle, F or H

<400> 76
Asp Ser Ser Xaa Met Thr His Ala
1 5

<210> 77
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (7)
<223> Xaa= E, A, D, M, Q, S or G

<400> 77
Asp Ser Ser Asn Leu Glu Xaa Thr His Ala
1 5 10

<210> 78
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (8)
<223> Xaa= V, A, N, T, L, F or S

<400> 78
Asp Ser Ser Asn Leu Glu Met Xaa His Ala
1 5 10

<210> 79
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (8)
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 79
Asp Ser Asn Leu Glu Met Thr Xaa Ala
1 5

<210> 80
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (9)
<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 80
Asp Ser Asn Leu Glu Met Thr His Xaa
1 5

<210> 81
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= E, G, I, D, T, cysteic acid or S

<220>
<221> SITE
<222> (7)
<223> Xaa= cysteic acid

<400> 81
Xaa His Gly Phe Gln Leu Xaa His
1 5

<210> 82
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (2)
<223> Xaa= A, V, I, S, H, Y, T or F

<220>
<221> SITE
<222> (7)
<223> Xaa= cysteic acid

<400> 82
Thr Xaa Gly Phe Gln Leu Xaa His
1 5

<210> 83
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (3)
<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<220>
<221> SITE
<222> (7)
<223> Xaa= cysteic acid

<400> 83

Thr His Xaa Phe Gln Leu Xaa His
1 5

<210> 84
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (4)
<223> Xaa= Y, L, M, Nle, F or H

<220>
<221> SITE
<222> (7)
<223> Xaa= cysteic acid

<400> 84
Thr His Gly Xaa Gln Leu Xaa His
1 5

<210> 85
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (5)
<223> Xaa= E, A, D, M, Q, S or G

<220>
<221> SITE
<222> (7)
<223> Xaa= cysteic acid

<400> 85
Thr His Gly Phe Xaa Leu Xaa His
1 5

<210> 86
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE

<222> (6)
<223> Xaa= V, A, N, T, L, F or S

<220>
<221> SITE
<222> (7)
<223> Xaa= cysteic acid

<400> 86
Thr His Gly Phe Gln Xaa Xaa His
1 5

<210> 87
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (7)
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 87
Thr His Gly Phe Gln Leu Xaa His
1 5

<210> 88
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (7)
<223> Xaa= cysteic acid

<220>
<221> SITE
<222> (8)
<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 88
Thr His Gly Phe Gln Leu Xaa Xaa
1 5

<210> 89
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= E, G, I, D, T, cysteic acid or S

<400> 89
Xaa Tyr Thr His Ser Phe Ser Pro
1 5

<210> 90
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= cysteic acid

<220>
<221> SITE
<222> (2)
<223> Xaa= A, V, I, S, H, Y, T or F

<400> 90
Xaa Xaa Thr His Ser Phe Ser Pro
1 5

<210> 91
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= cysteic acid

<220>
<221> SITE
<222> (3)
<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<400> 91
Xaa Tyr Xaa His Ser Phe Ser Pro
1 5

<210> 92
<211> 8
<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (1)

<223> Xaa= cysteic acid

<220>

<221> SITE

<222> (4)

<223> Xaa= Y, L, M, Nle, F or H

<400> 92
Xaa Tyr Thr Xaa Ser Phe Ser Pro
1 5

<210> 93
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (1)

<223> Xaa= cysteic acid

<220>

<221> SITE

<222> (5)

<223> Xaa= E, A, D, M, Q, S or G

<400> 93
Xaa Tyr Thr His Xaa Phe Ser Pro
1 5

<210> 94
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (1)

<223> Xaa= cysteic acid

<220>

<221> SITE

<222> (6)

<223> Xaa= V, A, N, T, L, F or S

<400> 94
Xaa Tyr Thr His Ser Xaa Ser Pro
1 5

<210> 95
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= cysteic acid

<220>
<221> SITE
<222> (7)
<223> Xaa=E, G, F, H, cysteic acid or S

<400> 95
Xaa Tyr Thr His Ser Phe Xaa Pro
1 5

<210> 96
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa=cysteic acid

<220>
<221> SITE
<222> (8)
<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 96
Xaa Tyr Thr His Ser Phe Ser Xaa
1 5

<210> 97
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>

<221> SITE
<222> (1)
<223> Xaa= E, G, I, D, T, cysteic acid or S

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)
<223> Xaa= any amino acid

<400> 97
Xaa Thr Asp Xaa Gly Ser Xaa Gly
1 5

<210> 98
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (2)
<223> Xaa=A, V, I, S, H, Y, T or F

<220>
<221> SITE
<222> (4)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<400> 98
Ser Xaa Asp Xaa Gly Ser Xaa Gly
1 5

<210> 99
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (3)
<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<220>

<221> SITE
<222> (4)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<400> 99
Ser Thr Xaa Xaa Gly Ser Xaa Gly
1 5

<210> 100
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (4)
<223> Xaa= Y, L, M, Nle, F or H

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<400> 100
Ser Thr Asp Xaa Gly Ser Xaa Gly
1 5

<210> 101
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (4)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (5)
<223> Xaa= E, A, D, M, Q, S or G

<400> 101

Ser Thr Asp Xaa Xaa Ser Xaa Gly
1 5

<210> 102
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (4)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (6)
<223> Xaa= V, A, N, T, L, F or S

<400> 102
Ser Thr Asp Xaa Gly Xaa Xaa Gly
1 5

<210> 103
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (4)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (7)
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 103
Ser Thr Asp Xaa Gly Ser Xaa Gly
1 5

<210> 104
<211> 8
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (4)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (8)
<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 104
Ser Thr Asp Xaa Gly Ser Xaa Xaa
1 5

<210> 105
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= E, G, I, D, T, cysteic acid or S

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<400> 105

Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 106
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>

<221> SITE
<222> (2)
<223> Xaa= A, V, I, S, H, Y, T or F

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<400> 106
Xaa Xaa Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 107
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (3)
<223> Xaa= N, L, K, S, G, T, D, A, Q or E

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<400> 107
Xaa Phe Xaa Xaa Xaa Xaa Xaa Asn
1 5

<210> 108
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)
<223> Xaa= Y, L, M, Nle, F or H

<220>

<221> SITE
<222> (5)..(7)
<223> Xaa= any amino acid

<400> 108
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 109
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)
<223> Xaa = any amino acid

<220>
<221> SITE
<222> (5)
<223> Xaa= E, A, D, M, Q, S or G

<220>
<221> SITE
<222> (6)..(7)
<223> Xaa= any amino acid

<400> 109
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 110
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)..(5)
<223> Xaa= any amino acid

<220>

<221> SITE
<222> (6)
<223> Xaa= V, A, N, T, L, F or S

<220>
<221> SITE
<222> (7)
<223> Xaa= any amino acid

<400> 110
Xaa Phe Ala Xaa Xaa Xaa Xaa Asn
1 5

<210> 111
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)..(6)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (7)
<223> Xaa= E, G, F, H, cysteic acid or S

<400> 111
Xaa Phe Ala Xaa Xaa Xaa Xaa Xaa Asn
1 5

<210> 112
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (1)
<223> Xaa= any amino acid

<220>
<221> SITE
<222> (4)..(7)
<223> Xaa= any amino acid

<220>

<221> SITE
<222> (8)
<223> Xaa= F, W, G, A, H, P, G, N or S

<400> 112
Xaa Phe Ala Xaa Xaa Xaa Xaa Xaa
1 5

<210> 113
<211> 9
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 113
Glu Val Asn Leu Asp Ala Glu Phe Arg
1 5

<210> 114
<211> 7
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 114
Asp Tyr Lys Asp Asp Asp Lys
1 5

<210> 115
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 115
Ala Cys Gly Ser Glu Ser Met Asp Ser Gly Ile Ser Leu Asp Asn Lys
1 5 10 15

Trp

<210> 116
<211> 17
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 116
Trp Lys Lys Gly Ala Ile Ile Gly Leu Met Val Gly Gly Val Val Lys
1 5 10 15

Lys

<210> 117
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 117
Ala Asn Leu Ser Thr Phe Ala Gln Pro Arg Arg
1 5 10

<210> 118
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 118
Tyr Arg Tyr Gln Ser His Asp Tyr Ala Phe Ser Ser Val Glu Lys Leu
1 5 10 15
Leu His Leu Gly Gly Cys
20

<210> 119
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 119
Tyr Arg Tyr Gln Ser His Asp Tyr Ala Phe Ser Ser Val Glu Lys Leu
1 5 10 15
Leu His Leu Gly Gly Cys
20

<210> 120
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

peptide sequence

<400> 120
Lys Thr Ile Thr Leu Glu Val Glu Pro Ser
1 5 10

<210> 121
<211> 12
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> SITE
<222> (9)
<223> Xaa= cysteic acid

<400> 121
Val Glu Ala Leu Tyr Leu Val Cys Xaa Gly Glu Arg
1 5 10

<210> 122
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 122
Val Glu Ala Leu Tyr Leu Val Glu Gly Glu Arg
1 5 10

<210> 123
<211> 363
<212> PRT
<213> Homo sapiens

<220>
<223> galactosyltransferase

<400> 123
Met Ala Ser Lys Ser Trp Leu Asn Phe Leu Thr Phe Leu Cys Gly Ser
1 5 10 15

Ala Ile Gly Phe Leu Leu Cys Ser Gln Leu Phe Ser Ile Leu Leu Gly
20 25 30

Glu Lys Val Asp Thr Gln Pro Asn Val Leu His Asn Asp Pro His Ala
35 40 45

Arg His Ser Asp Asp Asn Gly Gln Asn His Leu Glu Gly Gln Met Asn
50 55 60

Phe Asn Ala Asp Ser Ser Gln His Lys Asp Glu Asn Thr Asp Ile Ala
65 70 75 80

Glu Asn Leu Tyr Gln Lys Val Arg Ile Leu Cys Trp Val Met Thr Gly
 85 90 95
 Pro Gln Asn Leu Glu Lys Lys Ala Lys His Val Lys Ala Thr Trp Ala
 100 105 110
 Gln Arg Cys Asn Lys Val Leu Phe Met Ser Ser Glu Glu Asn Lys Asp
 115 120 125
 Phe Pro Ala Val Gly Leu Lys Thr Lys Glu Gly Arg Asp Gln Leu Tyr
 130 135 140
 Trp Lys Thr Ile Lys Ala Phe Gln Tyr Val His Glu His Tyr Leu Glu
 145 150 155 160
 Asp Ala Asp Trp Phe Leu Lys Ala Asp Asp Asp Thr Tyr Val Ile Leu
 165 170 175
 Asp Asn Leu Arg Trp Leu Leu Ser Lys Tyr Asp Pro Glu Glu Pro Ile
 180 185 190
 Tyr Phe Gly Arg Arg Phe Lys Pro Tyr Val Lys Gln Gly Tyr Met Ser
 195 200 205
 Gly Gly Ala Gly Tyr Val Leu Ser Lys Glu Ala Leu Lys Arg Phe Val
 210 215 220
 Asp Ala Phe Lys Thr Asp Lys Cys Thr His Ser Ser Ser Ile Glu Asp
 225 230 235 240
 Leu Ala Leu Gly Arg Cys Met Glu Ile Met Asn Val Glu Ala Gly Asp
 245 250 255
 Ser Arg Asp Thr Ile Gly Lys Glu Thr Phe His Pro Phe Val Pro Glu
 260 265 270
 His His Leu Ile Lys Gly Tyr Leu Pro Arg Thr Phe Trp Tyr Trp Asn
 275 280 285
 Tyr Asn Tyr Tyr Pro Pro Val Glu Gly Pro Gly Cys Cys Ser Asp Leu
 290 295 300

 Ala Val Ser Phe His Tyr Val Asp Ser Thr Thr Met Tyr Glu Leu Glu
 305 310 315 320
 Tyr Leu Val Tyr His Leu Arg Pro Tyr Gly Tyr Leu Tyr Arg Tyr Gln
 325 330 335
 Pro Thr Leu Pro Glu Arg Ile Leu Lys Glu Ile Ser Gln Ala Asn Lys
 340 345 350
 Asn Glu Asp Thr Lys Val Lys Leu Gly Asn Pro
 355 360

<210> 124
 <211> 405
 <212> PRT
 <213> Homo sapiens

<220>
 <223> Homo sapiens sialyltransferase 1

<400> 124
 Ile His Thr Asn Leu Lys Lys Phe Ser Cys Cys Val Leu Val Phe
 1 5 10 15
 Leu Leu Phe Ala Val Ile Cys Val Trp Lys Glu Lys Lys Lys Gly Ser
 20 25 30
 Tyr Tyr Asp Ser Phe Lys Leu Gln Thr Lys Glu Phe Gln Val Leu Lys
 35 40 45
 Ser Leu Gly Lys Leu Ala Met Gly Ser Asp Ser Gln Ser Val Ser Ser
 50 55 60
 Ser Ser Thr Gln Asp Pro His Arg Gly Arg Gln Thr Leu Gly Ser Leu
 65 70 75 80
 Arg Gly Leu Ala Lys Ala Lys Pro Glu Ala Ser Phe Gln Val Trp Asn
 85 90 95
 Lys Asp Ser Ser Ser Lys Asn Leu Ile Pro Arg Leu Gln Lys Ile Trp
 100 105 110
 Lys Asn Tyr Leu Ser Met Asn Lys Tyr Lys Val Ser Tyr Lys Gly Pro
 115 120 125
 Gly Pro Gly Ile Lys Phe Ser Ala Glu Ala Leu Arg Cys His Leu Arg
 130 135 140
 Asp His Val Asn Val Ser Met Val Glu Val Thr Asp Phe Pro Phe Asn
 145 150 155 160
 Thr Ser Glu Trp Glu Gly Tyr Leu Pro Lys Glu Ser Ile Arg Thr Lys
 165 170 175
 Ala Gly Pro Trp Gly Arg Cys Ala Val Val Ser Ser Ala Gly Ser Leu
 180 185 190
 Lys Ser Ser Gln Leu Gly Arg Glu Ile Asp Asp His Asp Ala Val Leu
 195 200 205
 Arg Phe Asn Gly Ala Pro Thr Ala Asn Phe Gln Gln Asp Val Gly Thr
 210 215 220
 Lys Thr Thr Ile Arg Leu Met Asn Ser Gln Leu Val Thr Thr Glu Lys
 225 230 235 240
 Arg Phe Leu Lys Asp Ser Leu Tyr Asn Glu Gly Ile Leu Ile Val Trp
 245 250 255
 Asp Pro Ser Val Tyr His Ser Asp Ile Pro Lys Trp Tyr Gln Asn Pro
 260 265 270
 Asp Tyr Asn Phe Phe Asn Asn Tyr Lys Thr Tyr Arg Lys Leu His Pro
 275 280 285
 Asn Gln Pro Phe Tyr Ile Leu Lys Pro Gln Met Pro Trp Glu Leu Trp
 290 295 300
 Asp Ile Leu Gln Glu Ile Ser Pro Glu Glu Ile Gln Pro Asn Pro Pro
 305 310 315 320
 Ser Ser Gly Met Leu Gly Ile Ile Ile Met Met Thr Leu Cys Asp Gln
 325 330 335

Val	Asp	Ile	Tyr	Glu	Phe	Leu	Pro	Ser	Lys	Arg	Lys	Thr	Asp	Val	Cys
340								345						350	
Tyr	Tyr	Tyr	Gln	Lys	Phe	Phe	Asp	Ser	Ala	Cys	Thr	Met	Gly	Ala	Tyr
355						360						365			
His	Pro	Leu	Leu	Tyr	Glu	Lys	Asn	Leu	Val	Lys	His	Leu	Asn	Gln	Gly
370					375					380					
Thr	Asp	Glu	Asp	Ile	Tyr	Leu	Leu	Gly	Lys	Ala	Thr	Leu	Pro	Gly	Phe
385					390					395			400		
Arg	Thr	Ile	His	Cys											
			405												

<210> 125

<211> 518

<212> PRT

<213> Homo sapiens

<220>

<223> Homo sapiens aspartyl protease 1

<400> 125

Met	Gly	Ala	Leu	Ala	Arg	Ala	Leu	Leu	Leu	Pro	Leu	Leu	Ala	Gln	Trp
1				5				10					15		

Leu	Leu	Arg	Ala	Ala	Pro	Glu	Leu	Ala	Pro	Ala	Pro	Phe	Thr	Leu	Pro
				20				25					30		

Leu	Arg	Val	Ala	Ala	Ala	Thr	Asn	Arg	Val	Val	Ala	Pro	Thr	Pro	Gly
				35				40				45			

Pro	Gly	Thr	Pro	Ala	Glu	Arg	His	Ala	Asp	Gly	Leu	Ala	Leu	Ala	Leu
				50			55				60				

Glu	Pro	Ala	Leu	Ala	Ser	Pro	Ala	Gly	Ala	Ala	Asn	Phe	Leu	Ala	Met
				65			70			75			80		

Val	Asp	Asn	Leu	Gln	Gly	Asp	Ser	Gly	Arg	Gly	Tyr	Tyr	Leu	Glu	Met
				85				90					95		

Leu	Ile	Gly	Thr	Pro	Pro	Gln	Lys	Leu	Gln	Ile	Leu	Val	Asp	Thr	Gly
				100				105				110			

Ser	Ser	Asn	Phe	Ala	Val	Ala	Gly	Thr	Pro	His	Ser	Tyr	Ile	Asp	Thr
				115			120				125				

Tyr	Phe	Asp	Thr	Glu	Arg	Ser	Ser	Thr	Tyr	Arg	Ser	Lys	Gly	Phe	Asp
				130			135			140					

Val	Thr	Val	Lys	Tyr	Thr	Gln	Gly	Ser	Trp	Thr	Gly	Phe	Val	Gly	Glu
				145			150			155			160		

Asp	Leu	Val	Thr	Ile	Pro	Lys	Gly	Phe	Asn	Thr	Ser	Phe	Leu	Val	Asn
				165			170					175			

Ile	Ala	Thr	Ile	Phe	Glu	Ser	Glu	Asn	Phe	Phe	Leu	Pro	Gly	Ile	Lys
				180			185				190				

Trp	Asn	Gly	Ile	Leu	Gly	Leu	Ala	Tyr	Ala	Thr	Leu	Ala	Lys	Pro	Ser
				195			200				205				

Ser Ser Leu Glu Thr Phe Phe Asp Ser Leu Val Thr Gln Ala Asn Ile
 210 215 220
 Pro Asn Val Phe Ser Met Gln Met Cys Gly Ala Gly Leu Pro Val Ala
 225 230 235 240
 Gly Ser Gly Thr Asn Gly Gly Ser Leu Val Leu Gly Gly Ile Glu Pro
 245 250 255
 Ser Leu Tyr Lys Gly Asp Ile Trp Tyr Thr Pro Ile Lys Glu Glu Trp
 260 265 270
 Tyr Tyr Gln Ile Glu Ile Leu Lys Leu Glu Ile Gly Gly Gln Ser Leu
 275 280 285
 Asn Leu Asp Cys Arg Glu Tyr Asn Ala Asp Lys Ala Ile Val Asp Ser
 290 295 300
 Gly Thr Thr Leu Leu Arg Leu Pro Gln Lys Val Phe Asp Ala Val Val
 305 310 315 320
 Glu Ala Val Ala Arg Ala Ser Leu Ile Pro Glu Phe Ser Asp Gly Phe
 325 330 335
 Trp Thr Gly Ser Gln Leu Ala Cys Trp Thr Asn Ser Glu Thr Pro Trp
 340 345 350
 Ser Tyr Phe Pro Lys Ile Ser Ile Tyr Leu Arg Asp Glu Asn Ser Ser
 355 360 365
 Arg Ser Phe Arg Ile Thr Ile Leu Pro Gln Leu Tyr Ile Gln Pro Met
 370 375 380
 Met Gly Ala Gly Leu Asn Tyr Glu Cys Tyr Arg Phe Gly Ile Ser Pro
 385 390 395 400
 Ser Thr Asn Ala Leu Val Ile Gly Ala Thr Val Met Glu Gly Phe Tyr
 405 410 415
 Val Ile Phe Asp Arg Ala Gln Lys Arg Val Gly Phe Ala Ala Ser Pro
 420 425 430
 Cys Ala Glu Ile Ala Gly Ala Ala Val Ser Glu Ile Ser Gly Pro Phe
 435 440 445
 Ser Thr Glu Asp Val Ala Ser Asn Cys Val Pro Ala Gln Ser Leu Ser
 450 455 460
 Glu Pro Ile Leu Trp Ile Val Ser Tyr Ala Leu Met Ser Val Cys Gly
 465 470 475 480
 Ala Ile Leu Leu Val Leu Ile Val Leu Leu Leu Pro Phe Arg Cys
 485 490 495
 Gln Arg Arg Pro Arg Asp Pro Glu Val Val Asn Asp Glu Ser Ser Leu
 500 505 510
 Val Arg His Arg Trp Lys
 515

<211> 255
 <212> PRT
 <213> Homo sapiens

 <220>
 <223> Homo sapiens syntaxin 6

 <400> 126
 Met Ser Met Glu Asp Pro Phe Phe Val Val Lys Gly Glu Val Gln Lys
 1 5 10 15

 Ala Val Asn Thr Ala Gln Gly Leu Phe Gln Arg Trp Thr Glu Leu Leu
 20 25 30

 Gln Asp Pro Ser Thr Ala Thr Arg Glu Glu Ile Asp Trp Thr Thr Asn
 35 40 45

 Glu Leu Arg Asn Asn Leu Arg Ser Ile Glu Trp Asp Leu Glu Asp Leu
 50 55 60

 Asp Glu Thr Ile Ser Ile Val Glu Ala Asn Pro Arg Lys Phe Asn Leu
 65 70 75 80

 Asp Ala Thr Glu Leu Ser Ile Arg Lys Ala Phe Ile Thr Ser Thr Arg
 85 90 95

 Gln Val Val Arg Asp Met Lys Asp Gln Met Ser Thr Ser Val Gln
 100 105 110

 Ala Leu Ala Glu Arg Lys Asn Arg Gln Ala Leu Leu Gly Asp Ser Gly
 115 120 125

 Ser Gln Asn Trp Ser Thr Gly Thr Thr Asp Lys Tyr Gly Arg Leu Asp
 130 135 140

 Arg Glu Leu Gln Arg Ala Asn Ser His Phe Ile Glu Glu Gln Gln Ala
 145 150 155 160

 Gln Gln Gln Leu Ile Val Glu Gln Gln Asp Glu Gln Leu Glu Leu Val
 165 170 175

 Ser Gly Ser Ile Gly Val Leu Lys Asn Met Ser Gln Arg Ile Gly Gly
 180 185 190

 Glu Leu Glu Glu Gln Ala Val Met Leu Glu Asp Phe Ser His Glu Leu
 195 200 205

 Glu Ser Thr Gln Ser Arg Leu Asp Asn Val Met Lys Lys Leu Ala Lys
 210 215 220

 Val Ser His Met Thr Ser Asp Arg Arg Gln Trp Cys Ala Ile Ala Ile
 225 230 235 240

 Leu Phe Ala Val Leu Leu Val Val Leu Ile Leu Phe Leu Val Leu
 245 250 255

<210> 127
 <211> 1728
 <212> DNA
 <213> Artificial Sequence

 <220>

<223> Description of Artificial Sequence: nucleic acid
encoding recombinant fusion protein

<400> 127

atgctgctgc tgctgctgct gctggccctg aggctacagc tctccctggg catcatcccc 60
gttgaggagg agaacccgga cttcttggaaac cgcgaggcag ccgaggccct gggtgccgcc 120
aagaagctgc agcctgcaca gacagccgcc aagaacctca tcatacttcctt gggcgatggg 180
atgggggtgt ctacggtgac agctgccagg atcctaaaag ggcagaagaa ggacaaaactg 240
ggccctgaga taccctggc catggaccgc ttcccataatg tggctctgtc caagacatac 300
aatgttagaca aacatgtgcc agacagtgg a gccacagcca cggcctaccc gtgcggggtc 360
aaggggcaact tccagaccat tggcttgagt gcagccgcc gctttaacca gtgcacacg 420
acacgcggca acgagggtcat ctccgtatg aatcgggcca agaaaagcagg gaagtcaatg 480
ggagtggtaa ccaccacacg agtgcagcac gcctcgccag cggcaccta cgccccacacg 540
gtgaaccgcgca actggtaatc ggacgcccac gtgcctgcct cggcccgccca ggagggggtgc 600
caggacatcg ctacggcagct catctccaaatc atggacatttgc acgtgatctt aggtggaggc 660
cggaaatatac tggtttccat gggaaacccca gacccttgat acccagatga ctacagccaa 720
ggtgggacca ggctggacgg ggaaatctg gtgcaggat ccattggcgaa ggcggccagg 780
gcccggtagt tggaaaccg cactgagctc atgcaggctt ccctggaccc gtctgtgacc 840
catctcatgg gtctcttga gcctggagac atgaaatacg agatccaccg agactccaca 900
ctggaccctt ccctgatggg gatgacagag gctgcctgc gcctgctgag caggaacccc 960
cgccggttct tcctttcgat ggagggtggt cgcatcgacc atggcatca tggaaagcagg 1020
gtttaccggg cactgactga gacgatcatg ttgcacgacg ccattgagag ggcggggccag 1080
ctcaccagcg aggaggacac gctgagccct gtcactgccc accactccca cgtcttctcc 1140
ttcggaggct accccctgcg agggagctcc atttcggggc tggccctgg caaggcccgg 1200
gacaggaagg cctacacggt cctcctatac ggaaacggc caggctatgt gctcaaggac 1260
ggcgcggccgc cggatgttac cgagagcgg agcggggagcc ccgagtatcg gcagcagtca 1320
gcagtggccc tggacaaga gacccacgca ggcgaggacg tggcggtgtt cgccgcggc 1380
ccgcaggcgc acctggttca cggcgtgcag gagcagaccc tcatacgca cgtcatggcc 1440
ttcggccctt gcctggagcc ctacaccgcg ttgcacctgg cggccccccgc cggcaccacc 1500
gacgcccgcgca acccaggtaa ctatgaagtt gaattccgaa gacactcta ctagaggggt 1560
gaaagaggat ttttacatc tccaaaggca ctctacctcg tagaggggtga aagaggattc 1620
ttctacacta gtctcatgac catagcctat gtcatggctg ccatctgcgc cctcttcatg 1680
ctgccactct gcctcatggt ggactacaag gatgatgtat acaagtag 1728

<210> 128

<211> 575

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: recombinant
fusion protein sequence

<400> 128

Met Leu Leu Leu Leu Leu Gly Leu Arg Leu Gln Leu Ser Leu
1 5 10 15

Gly Ile Ile Pro Val Glu Glu Asn Pro Asp Phe Trp Asn Arg Glu
20 25 30

Ala Ala Glu Ala Leu Gly Ala Ala Lys Lys Leu Gln Pro Ala Gln Thr
35 40 45

Ala Ala Lys Asn Leu Ile Ile Phe Leu Gly Asp Gly Met Gly Val Ser
50 55 60

Thr Val Thr Ala Ala Arg Ile Leu Lys Gly Gln Lys Lys Asp Lys Leu
65 70 75 80

Gly Pro Glu Ile Pro Leu Ala Met Asp Arg Phe Pro Tyr Val Ala Leu
85 90 95

Ser Lys Thr Tyr Asn Val Asp Lys His Val Pro Asp Ser Gly Ala Thr

100	105	110
Ala Thr Ala Tyr Leu Cys Gly Val Lys Gly Asn Phe Gln Thr Ile Gly		
115	120	125
Leu Ser Ala Ala Ala Arg Phe Asn Gln Cys Asn Thr Thr Arg Gly Asn		
130	135	140
Glu Val Ile Ser Val Met Asn Arg Ala Lys Lys Ala Gly Lys Ser Val		
145	150	155
Gly Val Val Thr Thr Arg Val Gln His Ala Ser Pro Ala Gly Thr		
165	170	175
Tyr Ala His Thr Val Asn Arg Asn Trp Tyr Ser Asp Ala Asp Val Pro		
180	185	190
Ala Ser Ala Arg Gln Glu Gly Cys Gln Asp Ile Ala Thr Gln Leu Ile		
195	200	205
Ser Asn Met Asp Ile Asp Val Ile Leu Gly Gly Arg Lys Tyr Met		
210	215	220
Phe Pro Met Gly Thr Pro Asp Pro Glu Tyr Pro Asp Asp Tyr Ser Gln		
225	230	235
Gly Gly Thr Arg Leu Asp Gly Lys Asn Leu Val Gln Glu Trp Leu Ala		
245	250	255
Lys Arg Gln Gly Ala Arg Tyr Val Trp Asn Arg Thr Glu Leu Met Gln		
260	265	270
Ala Ser Leu Asp Pro Ser Val Thr His Leu Met Gly Leu Phe Glu Pro		
275	280	285
Gly Asp Met Lys Tyr Glu Ile His Arg Asp Ser Thr Leu Asp Pro Ser		
290	295	300
Leu Met Glu Met Thr Glu Ala Ala Leu Arg Leu Leu Ser Arg Asn Pro		
305	310	315
Arg Gly Phe Phe Leu Phe Val Glu Gly Gly Arg Ile Asp His Gly His		
325	330	335
His Glu Ser Arg Ala Tyr Arg Ala Leu Thr Glu Thr Ile Met Phe Asp		
340	345	350
Asp Ala Ile Glu Arg Ala Gly Gln Leu Thr Ser Glu Glu Asp Thr Leu		
355.	360	365
Ser Leu Val Thr Ala Asp His Ser His Val Phe Ser Phe Gly Gly Tyr		
370	375	380
Pro Leu Arg Gly Ser Ser Ile Phe Gly Leu Ala Pro Gly Lys Ala Arg		
385	390	395
Asp Arg Lys Ala Tyr Thr Val Leu Leu Tyr Gly Asn Gly Pro Gly Tyr		
405	410	415
Val Leu Lys Asp Gly Ala Arg Pro Asp Val Thr Glu Ser Glu Ser Gly		
420	425	430

Ser Pro Glu Tyr Arg Gln Gln Ser Ala Val Pro Leu Asp Glu Glu Thr
435 440 445

His Ala Gly Glu Asp Val Ala Val Phe Ala Arg Gly Pro Gln Ala His
450 455 460

Leu Val His Gly Val Gln Glu Gln Thr Phe Ile Ala His Val Met Ala
465 470 475 480

Phe Ala Ala Cys Leu Glu Pro Tyr Thr Ala Cys Asp Leu Ala Pro Pro
485 490 495

Ala Gly Thr Thr Asp Ala Ala His Pro Gly Asn Tyr Glu Val Glu Pro
500 505 510

Arg Arg Ala Leu Tyr Val Glu Gly Glu Arg Gly Phe Phe Tyr Thr Pro
515 520 525

Lys Ala Leu Tyr Leu Val Glu Gly Glu Arg Gly Phe Phe Tyr Thr Ser
530 535 540

Leu Met Thr Ile Ala Tyr Val Met Ala Ala Ile Cys Ala Leu Phe Met
545 550 555 560

Leu Pro Leu Cys Leu Met Val Asp Tyr Lys Asp Asp Asp Asp Lys
565 570 575

<210> 129

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 129

Lys Met Asp Ala Glu
1 5

<210> 130

<211> 5

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 130

Gly Arg Arg Gly Ser
1 5

<210> 131

<211> 10

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: synthetic

peptide sequence

<400> 131
Val Glu Ala Asn Tyr Glu Val Glu Gly Glu
1 5 10

<210> 132
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 132
Val Glu Ala Asn Tyr Ala Val Glu Gly Glu
1 5 10

<210> 133
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 133
Lys Thr Ile Asn Leu Glu Val Glu Pro Ser
1 5 10

<210> 134
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<220>
<221> MOD_RES
<222> (5)
<223> Nle

<400> 134
Lys Thr Ile Asn Xaa Glu Val Glu Pro Ser
1 5 10

<210> 135
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<221> MOD_RES

<222> (5)
<223> Nle

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 135
Lys Thr Ile Asn Xaa Glu Val Asp Pro Ser
1 5 10

<210> 136
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<221> MOD_RES
<222> (5)
<223> Nle

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 136
Lys Thr Ile Asn Xaa Asp Val Asp Pro Ser
1 5 10

<210> 137
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 137
Lys Thr Ile Ser Leu Asp Val Glu Pro Ser
1 5 10

<210> 138
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 138
Lys Thr Ile Ser Leu Asp Val Asp Pro Ser
1 5 10

<210> 139
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 139
Lys Met Asp Ala
1

<210> 140
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 140
Ser Tyr Glu Val
1

<210> 141
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 141
Ser Glu Val Ser Tyr Glu Val Glu Phe Arg
1 5 10

<210> 142
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 142
Asn Leu Asp Ala
1

<210> 143
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 143
Ser Glu Val Ser Tyr Asp Ala Glu Phe Arg
1 5 10

<210> 144
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 144
Ser Glu Val Ser Tyr Glu Ala Glu Phe Arg
1 5 10

<210> 145
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence.

<400> 145
Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
1 5 10 15

Glu Val Ser Tyr Glu Val Glu Phe Arg
20 25

<210> 146
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 146
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg
20

<210> 147
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 147
Lys Thr Glu Glu Ile Ser Glu Val Ser Tyr Glu Val Glu Phe Arg
1 5 10 15

<210> 148
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 148
Thr Glu Val Ser Tyr Glu Val Glu Phe Arg
1 5 10

<210> 149
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 149
Ser Glu Val Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 150
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 150
Thr Glu Val Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 151
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 151
Thr Glu Ile Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 152
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic

peptide sequence

<400> 152
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg
1 5 10

<210> 153
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 153
Ser Glu Ile Asp Tyr Glu Val Glu Phe Arg
1 5 10

<210> 154
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (11)
<223> Xaa=tryptophan

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 154
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 155
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (16)
<223> Xaa=tryptophan

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 155
Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa
1 5 10 15

Lys Lys

<210> 156
<211> 23

<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (21)
<223> Xaa=tryptophan

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 156
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val
1 5 10 15

Glu Phe Arg Xaa Lys Lys
20

<210> 157
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<220>
<221> SITE
<222> (26)
<223> Xaa=tryptophan

<400> 157
Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
1 5 10 15

Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
20 25

<210> 158
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (11)
<223> Xaa=tryptophan

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 158
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 159
<211> 18

```

<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      peptide sequence

<220>
<221> SITE
<222> (16)
<223> Xaa=tryptophan

<400> 159
Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg
   1           5           10          15

Xaa Lys Lys

<210> 160
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (21)
<223> Xaa=tryptophan

<220>
<223> Description of Artificial Sequence: synthetic
      peptide

<400> 160
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr
   1           5           10          15

Glu Val Glu Phe Arg Xaa Lys Lys
   20

<210> 161
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (26)
<223> Xaa=tryptophan

<220>
<223> Description of Artificial Sequence: synthetic
      peptide sequence

<400> 161
Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile
   1           5           10          15

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
   20           25

```

<210> 162
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (11)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 162
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 163
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (16)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 163
Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa
1 5 10 15

Lys Lys

<210> 164
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (21)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 164
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg Xaa Lys Lys
20

<210> 165
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (26)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 165
Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser
1 5 10 15

Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
20 25

<210> 166
<211> 13
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (11)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 166
Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
1 5 10

<210> 167
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (16)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 167
Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg
1 5 10 15

Xaa Lys Lys

<210> 168
<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (21)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 168
Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr
1 5 10 15

Glu Val Glu Phe Arg Xaa Lys Lys
20

<210> 169
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<221> SITE
<222> (26)
<223> Xaa=oregon green

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 169
Thr Arg Pro Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile
1 5 10 15

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Xaa Lys Lys
20 25

<210> 170
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 170
Ser Glu Val Asn Tyr Glu Val Glu Phe Arg
1 5 10

<210> 171
<211> 47
<212> DNA
<213> Artificial Sequence

```

<220>
<223> Description of Artificial Sequence: synthetic
      primer for site-directed mutagenesis of APP

<400> 171
gagatctctg aaatttagtta tgaagttagaa ttccgacatg actcagg 47

<210> 172
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      primer for site-directed mutagenesis of APP

<400> 172
tgagtcatgt cggaattcta cttcataact aatttcagag atctcctc 48

<210> 173
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      primer for site-directed mutagenesis of APP

<400> 173
gagatctctg aaagtagtta tgaagttagaa ttccgacatg actcagg 47

<210> 174
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      primer for site-directed mutagenesis of APP

<400> 174
tgagtcatgt cggaattcta cttcataact actttcagag atctcctc 48

<210> 175
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      primer for site-directed mutagenesis of APP

<400> 175
gagatctctg aaatttagtta tgaagcagaa ttccgacatg actcagg 47

<210> 176
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
      primer for site-directed mutagenesis of APP

```

<400> 176
tgagtcatgt cggaattctg cttcataact aatttcagag atctcc

48

<210> 177
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 177
Val Ser Tyr Glu Val
1 5

<210> 178
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 178
Val Ser Tyr Asp Ala
1 5

<210> 179
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 179
Ile Ser Tyr Glu Val
1 5

<210> 180
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 180
Val Lys Met Asp Ala
1 5

<210> 181
<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for generating mutant construct named
MBPC125-SYEV

<400> 181
gacatctctg aagttagtta ttaggcagaa ttccgacatg actcagg

47

<210> 182
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
primer for generating mutant construct named
MBPC125-SYEV

<400> 182
tgagtcatgt cggaattctg cctaataact cacttcagag atctccctc

48

<210> 183
<211> 6
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 183
Lys Lys Ser Tyr Glu Val
1 5

<210> 184
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 184
Val Glu Ala Asn Tyr Glu Val Glu Gly Glu
1 5 10

<210> 185
<211> 10
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic
peptide sequence

<400> 185
Val Glu Ala Asn Tyr Ala Val Glu Gly Glu
1 5 10

<210> 186
<211> 8
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 186
Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 187
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 187
Ser Tyr Glu Ala
1

<210> 188
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 188
Ser Tyr Ala Val
1

<210> 189
<211> 5
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: synthetic peptide sequence

<400> 189
Val Ser Tyr Glu Ala
1 5

<210> 190
<211> 13
<212> PRT
<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<400> 190

Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Trp Lys Lys
1 5 10

<210> 191

<211> 23

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<400> 191

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg Trp Lys Lys
20

<210> 192

<211> 15

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (1) .. (1)

<223> amino acid at position 1 is biotinylated

<220>

<221> SITE

<222> (14) .. (14)

<223> cys at position 14 is derivatized with an oregon green

<400> 192

Lys Glu Ile Ser Glu Ile Ser Tyr Glu Val Glu Phe Arg Lys Lys
1 5 10 15

<210> 193

<211> 22

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (1)..(1)

<223> amino acid at position 1 is biotinylated

<220>

<221> SITE

<222> (21)..(21)

<223> cys at position 21 is derivatized with an oregon green

<400> 193

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Ile Ser Tyr Glu
1 5 10 15

Val Glu Phe Arg Lys Lys
20

<210> 194

<211> 6806

<212> DNA

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic DNA sequence

<400> 194

ccgacaccat cgaatggcgc aaaaccttc gcggtatggc atgatacgac ccgaaagaga	60
gtcaattcag ggtggtaat gtgaaaccag taacgttata cgatgtcgca gagtatgccg	120
gtgtctctta tcagaccgtt tcccgcgtgg tgaaccaggc cagccacgtt tctgcgaaaa	180
cgcggaaaaa agtggaaagcg gcgatggcg agctgaatta cattccaaac cgcgtggcac	240
aacaactggc gggcaaacag tcgttgctga ttggcgttgc cacctccagt ctggccctgc	300
acgcgcccgtc gcaaattgtc gcggcgattaaatctcgac cgatcaactg ggtgccagcg	360
tgtgggtgtc gatggtagaa cgaagcggcg tcgaagcctg taaagcggcg gtgcacaatc	420
ttctcgcgca acgcgtcagt gggctgatca ttaactatcc gctggatgac caggatgccca	480
ttgctgtgga agctgcctgc actaatgttc cggcgatttt tcttgatgtc tctgaccaga	540
cacccatcaa cagtattatt ttctccatg aagacggtac gcgactggc gtggagcatc	600
tggtcgcatt gggtcaccag caaatcgac tggataat atctcaactcg caatcaaatt cagccatag	660
cgcgtctgcg tctggctggc tggataat atctcaactcg caatcaaatt cagccatag	720
cggAACGGGA aggcgactgg agtgcgttgttcccggtttca acaaaccatg caaatgctga	780
atgagggcat cgttccact gcgatgctgg ttgccaacga tcagatggcg ctggcgcaa	840
tgcgcgccat taccgagtcc gggctgcgcg ttggcgtggaa tatctcggtt gtggataacg	900
acgataccga agacagctca tgttatatcc cggcgtaac caccatcaaa caggattttc	960
gcctgctggg gcaaccaggc gtggaccgct tgctgcaact ctctcaggc caggcggtga	1020
agggcaatca gctgttgccc gtctcaactgg tgaaaagaaa aaccaccctg gcgcccaata	1080
cgcAAACCGC ctctccccgc gcgttggccg attcattaat gcagctggca cgacagggtt	1140
cccgactggaa aagcgggcag tgagcgcaac gcaattaatg tgagttagct cactcattag	1200
gcacaattct catgtttgac agcttatcat cgactgcacg gtgcaccaat gcttctggcg	1260
tcaggcagcc atcggaagct gtggatggc tgtcagggtc gtaaatcaact gcataattcg	1320
tgtcgctcaa ggccactcc cgttctggat aatgtttttt gcccgcacat cataacgggtt	1380
ctggcaaata ttctgaaatg agctgttgc aattaatcat cggctcgat aatgtgtgga	1440
attgtgagcg gataacaatt tcacacagga aacagccagt ccgttaggt gtttcacgaa	1500
gcacttcacc aacaaggacc atagattatg aaaactgaag aaggtaact ggtaatctgg	1560
attnaacggcg ataaaggcta taacggtctc gctgaagtgc gtaagaaatt cgagaaagat	1620
accggaaatta aagtcaccgt tgagcatccg gataaaactgg aagagaaatt cccacaggtt	1680
gcggcaactg gcgatggccc tgacattatc ttctggcac acgaccgctt tggtggctac	1740

gctcaatctg	gcctgttggc	tgaaatcacc	ccggacaaaag	cgttccagga	caagctgtat	1800
ccgtttacct	gggatgccgt	acgttacaac	ggcaagctga	ttgcttaccc	gatcgctgtt	1860
gaagcgttat	cgctgattta	taacaaagat	ctgctgccga	acccgccaaa	aacctggaa	1920
gagatcccgg	cgctggataa	agaactgaaa	gcgaaaggta	agagcgcgct	gatgttcaac	1980
ctgcaagaac	cgtacttcac	ctggccgctg	attgctgctg	acgggggtta	tgcgttcaag	2040
tatgaaaacg	gcaagtacga	cattaaagac	gtggcgtgg	ataacgctgg	cgcgaaagcg	2100
ggtctgacct	tcctgggtga	cctgattaaa	aacaaacaca	tgaatgcaga	caccgattac	2160
tccatcgca	aagctgcett	taataaaggc	gaaacagega	tgaccatcaa	cggcccgtgg	2220
gcatggtcca	acatcgacac	cagcaaagtg	aattatggtg	taacggtaact	gccgaccttc	2280
aagggtcaac	catccaaacc	gttcgttggc	gtgctgagcg	caggtattaa	cgcgcgcag	2340
ccgaacaaag	agctggcgaa	agagttcctc	gaaaactatc	tgctgactga	tgaaggtctg	2400
gaagcggtt	ataaaagacaa	accgctgggt	gccgtagcgc	tgaagtctta	cgaggaagag	2460
ttggcgaaag	atccacgtat	tgccgccacc	atgaaaaacg	cccagaaagg	tgaatcatg	2520
ccgaacatcc	cgcagatgtc	cgcttctgg	tatgccgtgc	gtactgcgg	gatcaacgcc	2580
gccagcggtc	gtcagactgt	cgatgaagcc	ctgaaagacg	cgcagactaa	ttcgagctcg	2640
gtacccggcc	ggggatccat	cgagggtagg	gccgaccgag	gactgaccac	tcgaccaggt	2700
tctgggttga	caaatatcaa	gacggaggag	atctctgaag	tgaatctgga	tgcagaattc	2760
cgacatgact	caggatatga	agttcatcat	caaaaattgg	tgttctttgc	agaagatgtg	2820
ggttcaaaca	aaggtgcaat	cattggactc	atggggcg	gtgttgtcat	agcgcacagt	2880
atcgcatca	ccttggtgat	gctgaagaag	aaacagtaca	catccattca	tcatggtg	2940
gtggaggtt	acgcccgtgt	caccccagag	gagcgccacc	tgtccaagat	gcagcagaac	3000
ggctacgaaa	atccaaccta	caagttctt	gagcagatgc	agaactagac	ccccgcacaca	3060
gcagcctctg	aagttggaca	gcaaaaccat	tgcttcacta	cccatcggtg	tccatttata	3120
gaataatgt	ggaagaaaca	aacccgttt	atgatttact	cattatcgcc	tttgacagc	3180
tgtgctgtaa	cacaagtata	tgccctgaact	tgaattaatc	cacacatcg	taatgtattc	3240
tatctctctt	tacatttgg	tctctatact	acattattaa	tgggtttgt	gtactgtaaa	3300
gaatttagct	gtatcaaact	agtaatagcc	tgaattcagt	aacctaacc	tcgatggatc	3360
ctctagagtc	gacctgcagg	caagcttggc	actggccgtc	gttttacaac	gtcgtgactg	3420
ggaaaaaccct	ggcggtaccc	aacttaatcg	ccttgcagca	catccccctt	tcgcgcagct	3480
gcgtaatagc	gaagaggccc	gcaccgatcg	cccttcccaa	cagttgcgc	gcctgaatgg	3540
cgaatggcag	cttggctgtt	ttggcggatg	agagaagatt	ttcagcctga	tacagattaa	3600
atcagaacgc	agaagcggtc	tgataaaaca	gaatttgcc	ggcggcagta	gcgcgggtgg	3660

cccacctgac	cccatgccga	actcagaagt	gaaacgccgt	agcgccgatg	gtagtgtggg	3720
gtctccccat	gcgagagtag	ggaactgccca	ggcatcaaata	aaaacgaaag	gctcagtcga	3780
aagactgggc	cttcgtttt	atctgttgg	tgtcggtgaa	cgctctcctg	agtaggacaa	3840
atccgccggg	agcgatttg	aacgttgcga	agcaacggcc	cggagggtgg	cgggcaggac	3900
gcccgccata	aactgccagg	catcaaatta	agcagaaggc	catcctgacg	gatggccttt	3960
ttgcgttct	acaaactctt	tttgttatt	tttctaaata	cattcaaata	tgtatccgct	4020
catgagacaa	taaccctgat	aatgcttca	ataatattga	aaaaggaaga	gtatgagtt	4080
tcaacatttc	cgtgtcgccc	ttattccctt	ttttgcggca	ttttgccttc	ctgttttgc	4140
tcacccagaa	acgctggtga	aagtaaaaga	tgctgaagat	cagttgggtg	cacgagtggg	4200
ttacatcgaa	ctggatctca	acagcggtaa	gatccttgag	agttttcgcc	ccgaagaacg	4260
ttttccaatg	atgagcactt	ttaaagttct	gctatgtggc	gcggatttat	cccggttggta	4320
cgccgggcaa	gagcaactcg	gtcgccgcat	acactattct	cagaatgact	tggttgagta	4380
ctcaccagtc	acagaaaagc	atcttacgga	tggcatgaca	gtaagagaat	tatgcagtgc	4440
tgccataacc	atgagtgata	acactgcggc	caacttactt	ctgacaacga	tcggaggacc	4500
gaaggagcta	accgcctttt	tgcacaacat	gggggatcat	gtaactcgcc	ttgatcggt	4560
ggaaccggag	ctgaatgaag	ccataccaaa	cgacgagcgt	gacaccacga	tgcctgttagc	4620
aatggcaaca	acgttgcgca	aactattaac	tggcgaacta	cttactctag	cttccggca	4680
acaattaata	gactggatgg	aggcggataa	agttgcagga	ccacttctgc	gctcgccct	4740
tccggctggc	tggtttattt	ctgataaattc	tggagccggt	gagcgtgggt	ctcgcggtat	4800
cattgcagca	ctggggccag	atggtaagcc	ctcccgtatc	gtagttatct	acacgacggg	4860
gagtcaggca	actatggatg	aacgaaatag	acagatcgct	gagataggtg	cctcactgat	4920
taagcattgg	taactgtcag	accaagtttta	ctcatatata	ctttagattt	atttaaaact	4980
tcatttttaa	tttaaaagga	tctaggtgaa	gatcctttt	gataatctca	tgacaaaaat	5040
cccttaacgt	gagtttcgt	tccactgagc	gtcagacccc	gtagaaaaga	tcaaaggatc	5100
ttcttgagat	ccttttttc	tgcgcgtaat	ctgctgcttg	caaacaaaaa	aaccaccgct	5160
accagcggtg	gtttgtttgc	cggatcaaga	gctaccaact	cttttccga	aggttaactgg	5220
cttcagcaga	gcbcagatac	caaatactgt	ccttctagtg	tagccgtat	taggccacca	5280
cttcaagaac	tctgttagcac	cgcctacata	cctcgctctg	ctaattcctgt	taccagtggc	5340
tgctgccagt	ggcgataagt	cgtgtcttac	cgggttggac	tcaagacgt	agttaccgga	5400
taaggcgcag	cggtcgggct	gaacgggggg	ttcgtgcaca	cagcccagct	tggagcgaac	5460
gacctacacc	gaactgagat	acctacagcg	tgagctatga	gaaagcgcca	cgcttcccga	5520
agggagaaag	gcggacaggt	atccggtaag	cggcagggtc	ggaacaggag	agcgcacgag	5580

ggagcttcca gggggaaacg cctggtatct ttatagtcct gtcgggttc gccacctctg 5640
acttgagcgt cgattttgt gatgctcgtc agggggcgg agcctatgga aaaacgccag 5700
caacgcggcc ttttacggt tcctggcctt ttgctggcct tttgctcaca ttttcttcc 5760
tgcgttatcc cctgattctg tggataaccg tattaccgcc tttgagttagt ctgataaccgc 5820
tcgcccgcagc cgaacgaccg agcgcagcga gtcagttagc gaggaagcgg aagagcgcct 5880
gatgcggtat tttctcccta cgcacatctgtg cggtattca caccgcataat ggtgcactct 5940
cagtacaatc tgctctgatg ccgcatacgat aagccagat acactccgct atcgctacgt 6000
gactgggtca tggctgcgcc cccacacccg ccaacacccg ctgacgcgcct ctgacgggct 6060
tgtctgctcc cggcatccgc ttacagacaa gctgtgaccg tctccggag ctgcatgtgt 6120
cagaggttt caccgtcatac accgaaacgc gcgaggcagc tgcgtaaag ctcatacg 6180
tggcgtgaa gcgattcaca gatgtctgcc tgttcatccg cgtccagctc gttgagttc 6240
tccagaagcg ttaatgtctg gcttctgata aagcgggcca tgttaaggc ggtttttcc 6300
tgtttggtca cttgatgcct ccgtgttaagg gggaaatttct gttcatggg gtaatgatac 6360
cgatgaaacg agagaggatg ctcacgatac gggtaactga tgatgaacat gcccggttac 6420
tggAACGTTG tgagggtaaa caactggcgg tatggatgcg gcgggaccag agaaaaatca 6480
ctcagggtca atgccagcgc ttcgttaata cagatgttagg tgttccacag ggtagccagc 6540
agcatcctgc gatgcagatc cggAACATAA tggcaggg cgctgacttc cgcgtttcca 6600
gactttacga AACACGGAAA ccgaagacca ttcatgtgt tgctcaggc gcagacgttt 6660
tgcagcagca gtcgcttcac gttcgctcgc gtatcggtga ttcattctgc taaccagtaa 6720
ggcaaccccg ccagcctagc cgggtcctca acgacaggag cacgatcatg cgcacccgtg 6780
gccaggaccc aacgctgccc gaaatt 6806

<210> 195

<211> 13

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

<221> MOD_RES

<222> (1)..(1)

<223> ACETYLATION (MCA)

<220>

<221> SITE

<222> (11)..(11)

<223> 2,4-dinitrophenyl group after the Lys at position 11

<400> 195

Ser Glu Val Asn Leu Asp Ala Glu Phe Arg Lys Arg Arg
1 5 10

<210> 196

<211> 12

<212> PRT

<213> Artificial sequence

<220>

<223> Description of artificial sequence: synthetic peptide sequence

<220>

<221> SITE

<222> (4)..(4)

<223> amino acid at position 4 has been derivatized with a statine

<400> 196

Ser Glu Val Asn Val Ala Glu Phe Arg Gly Gly Cys
1 5 10

<210> 197

<211> 10

<212> PRT

<213> synthetic peptide sequence

<220>

<221> SITE

<222> (4)..(4)

<223> amino acid at position 4 has been derivatized with a statine

<220>

<221> SITE

<222> (10)..(10)

<223> amino acid at position 10 has been derivatized with Bodipy FL

<400> 197

Ser Glu Val Asn Val Ala Glu Phe Arg Cys
1 5 10

<210> 198

<211> 2043

<212> DNA

<213> Mus musculus

<400> 198

atggcccccag	cgctgcactg	gctcctgcta	tgggtggct	cggaaatgct	gcctgcccag	60
ggaacccatc	tcggcatccg	gctgcccctt	cgcagcggcc	tggcagggcc	accctgggc	120
ctgaggctgc	cccgggagac	tgacgaggaa	tcggaggagc	ctggccggag	aggcagcttt	180
gtggagatgg	tggacaacct	gaggggaaag	tccggccagg	gctactatgt	ggagatgacc	240
gtaggcagcc	ccccacagac	gctcaacatc	ctggtgacca	cggcagtag	taactttgca	300
gtgggggctg	ccccacacccc	tttcctgcat	cgctactacc	agaggcagct	gtccagcaca	360
tatcgagacc	tccgaaaggg	tgtgtatgt	ccctacacccc	agggcaagt	ggagggggaa	420
ctgggcaccc	acctggtgag	catccctcat	ggccccaacg	tcactgtcg	tgccaaacatt	480
gctgccatca	ctgaatcgga	caagttcttc	atcaatggtt	ccaaactggga	gggcataccta	540
gggctggcct	atgctgagat	tgccaggccc	gacgactctt	tggagccctt	ctttgactcc	600
ctggtaagc	agacccacat	tcccaacatc	ttttccctgc	agctctgtgg	cgctggcttc	660
cccctcaacc	agaccgaggc	actggcctcg	gtgggaggg	gcatgatcat	tggtggtatc	720
gaccactcgc	tatacacggg	cagtctctgg	tacacaccca	tccggcggga	gtggatttat	780
gaagtgatca	ttgtacgtgt	ggaaatcaat	ggtaagatc	tcaagatgga	ctgcaaggag	840
tacaactacg	acaagagcat	tgtggacagt	gggaccacca	acttcgctt	gcccaagaaa	900
gtatTTgaag	ctgccgtcaa	gtccatcaag	gcagcctcct	cgacggagaa	gttcccgat	960
ggctttggc	tagggagca	gctggtgtgc	tggcaagcag	gcacgacccc	ttggaacatt	1020
ttcccaagtca	tttcacttta	cctcatgggt	gaagtcacca	atcagtcctt	ccgcatcacc	1080
atccttcctc	agcaatacct	acggccggtg	gaggacgtgg	ccacgtccca	agacgactgt	1140

tacaagttcg	ctgttcaca	gtcatccacg	ggcactgtta	tgggagccgt	catcatggaa	1200
ggtttctatg	tcgtttcga	tcgagcccga	aaggaaattg	gctttgtgt	cagcgcttgc	1260
catgtgcacg	atgagttcag	gacggcggca	gtgaaaggtc	cgtttggcacatg	1320	
gaagactgtg	gctacaacat	tccccagaca	gatgagtcaa	cacttatgac	catagcctat	1380
gtcatggcgg	ccatctgcgc	cctttcatg	ttgccactct	gcctcatggat	atgtcagtgg	1440
cgtgcctgc	gttgctgcg	ccaccagcac	gatgactttg	ctgatgacat	ctccctgctc	1500
aagtaaggag	gctcggtggc	agatgatgga	gacgcccctg	gaccacatct	gggtgggtcc	1560
cttggtcac	atgagttgga	gctatggatg	gtacctgtgg	ccagagcacc	tcaggaccct	1620
caccaacctg	ccaatgcttc	tggcgtgaca	gaacagagaa	atcaggcaag	ctggattaca	1680
gggcttgcac	ctgttaggaca	caggagaggg	aaggaagcag	cgttctggtg	gcaggaatat	1740
ccttaggcac	cacaaacttg	agttggaaat	tttgctgctt	gaagcttcag	ccctgaccct	1800
ctgcccagca	tccttttagag	tctccaacct	aaagtattct	ttatgtcctt	ccagaagtac	1860
tggcgtcata	ctcaggctac	ccggcatgtg	tccctgtgg	accctggcag	agaaaaggccc	1920
aatctcattc	cctgctggcc	aaagtcagca	gaagaaggtg	aagtttgc	gttgctttag	1980
tgatagggac	tgcagactca	agcctacact	ggtacaaaga	ctgcgtctt	agataaaacaa	2040
gaa						2043

<210> 199
 <211> 501
 <212> PRT
 <213> Mus musculus

<400> 199

Met Ala Pro Ala Leu His Trp Leu Leu Leu Trp Val Gly Ser Gly Met
 1 5 10 15

Leu Pro Ala Gln Gly Thr His Leu Gly Ile Arg Leu Pro Leu Arg Ser
 20 25 30

Gly Leu Ala Gly Pro Pro Leu Gly Leu Arg Leu Pro Arg Glu Thr Asp
 35 40 45

Glu Glu Ser Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val
 50 55 60

Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr
 65 70 75 80

Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser
 85 90 95

Ser Asn Phe Ala Val Gly Ala Ala Pro His Pro Phe Leu His Arg Tyr
 100 105 110

Tyr Gln Arg Gln Leu Ser Ser Thr Tyr Arg Asp Leu Arg Lys Gly Val
 115 120 125

Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp
130 135 140

Leu Val Ser Ile Pro His Gly Pro Asn Val Thr Val Arg Ala Asn Ile
145 150 155 160

Ala Ala Ile Thr Glu Ser Asp Lys Phe Phe Ile Asn Gly Ser Asn Trp
165 170 175

Glu Gly Ile Leu Gly Leu Ala Tyr Ala Glu Ile Ala Arg Pro Asp Asp
180 185 190

Ser Leu Glu Pro Phe Phe Asp Ser Leu Val Lys Gln Thr His Ile Pro
195 200 205

Asn Ile Phe Ser Leu Gln Leu Cys Gly Ala Gly Phe Pro Leu Asn Gln
210 215 220

Thr Glu Ala Leu Ala Ser Val Gly Gly Ser Met Ile Ile Gly Gly Ile
225 230 235 240

Asp His Ser Leu Tyr Thr Gly Ser Leu Trp Tyr Thr Pro Ile Arg Arg
245 250 255

Glu Trp Tyr Tyr Glu Val Ile Ile Val Arg Val Glu Ile Asn Gly Gln
260 265 270

Asp Leu Lys Met Asp Cys Lys Glu Tyr Asn Tyr Asp Lys Ser Ile Val
275 280 285

Asp Ser Gly Thr Thr Asn Leu Arg Leu Pro Lys Lys Val Phe Glu Ala
290 295 300

Ala Val Lys Ser Ile Lys Ala Ala Ser Ser Thr Glu Lys Phe Pro Asp
305 310 315 320

Gly Phe Trp Leu Gly Glu Gln Leu Val Cys Trp Gln Ala Gly Thr Thr
325 330 335

Pro Trp Asn Ile Phe Pro Val Ile Ser Leu Tyr Leu Met Gly Glu Val
340 345 350

Thr Asn Gln Ser Phe Arg Ile Thr Ile Leu Pro Gln Gln Tyr Leu Arg
355 360 365

Pro Val Glu Asp Val Ala Thr Ser Gln Asp Asp Cys Tyr Lys Phe Ala
370 375 380

Val Ser Gln Ser Ser Thr Gly Thr Val Met Gly Ala Val Ile Met Glu
385 390 395 400

Gly Phe Tyr Val Val Phe Asp Arg Ala Arg Lys Arg Ile Gly Phe Ala
405 410 415

Val Ser Ala Cys His Val His Asp Glu Phe Arg Thr Ala Ala Val Glu
420 425 430

Gly Pro Phe Val Thr Ala Asp Met Glu Asp Cys Gly Tyr Asn Ile Pro
435 440 445

Gln Thr Asp Glu Ser Thr Leu Met Thr Ile Ala Tyr Val Met Ala Ala
450 455 460

Ile Cys Ala Leu Phe Met Leu Pro Leu Cys Leu Met Val Cys Gln Trp
465 470 475 480

Arg Cys Leu Arg Cys Leu Arg His Gln His Asp Asp Phe Ala Asp Asp
485 490 495

Ile Ser Leu Leu Lys
500